

Listing of Claims:

1. (Currently amended) A method for use in managing resources in networking, the method comprising:

adding a field to an operating system kernel software procedure, the field referencing a virtual router context;

modifying ~~the operating system kernel~~packet processing software code to provide heritability of~~cause the field referencing a virtual router context in at least one of a process and socket~~packet processing software code to execute in accordance with the virtual router context;
and

modifying the operating system kernel to designate a lead operating system kernel for a distributed host, wherein the lead operating system kernel performs tasks for the distributed
host~~running application code that is generically written for an operating system on an operating system that operates in multiple virtual router contexts.~~

2. (Currently amended) A method for using a network device having an operating system instance that operates in a plurality of routing contexts, the method comprising:

associating a first network with a first routing context and a second network with a second routing context, wherein the first context is isolated from the second context;

receiving, at the same networking address of the network device, a first message originating from the first network and a second message originating from the second network by the network device;

assigning to the first message a first routing context number, wherein the first message is determined to be associated with the first routing context using the first routing context number;

associating the first message with a first application running on the operating system instance of the network device based on a determination that the first message is associated with the first routing context;

associating the second message with a second application running on the operating system instance based on a determination that the second message is associated with the second routing context;

~~creating~~ associating at least one of a process and a socket within the first routing context that inherits providing heritability of the first routing context information; and

processing the first message with one of a plurality of processors implementing a distributed host~~running separate operating system instances on a plurality of processors residing on the network device and implementing one IP host.~~

3. (Previously presented) The method of claim 2, wherein a socket for at least one of Transport Control Protocol (TCP), User Datagram Protocol (UDP), and raw IP code associated with the operating system instance inherits the routing context from the process in the first routing context.
4. (Previously presented) The method of claim 2, further comprising:
assigning to the first message a first routing context number, wherein the first message is determined to be associated with the first routing context using the first routing context number; and
assigning to the second message a second routing context number, wherein the second message is determined to be associated with the second routing context using the second routing context number.
5. (Previously presented) The method of claim 4, further comprising:
assigning a first routing table to the first router context, wherein the first routing table is associated with the first context number; and
assigning a second routing table to the second router context, wherein the second routing table is associated with the second context number.
6. (Previously presented) The method of claim 2, wherein the first and second networks are private networks that are isolated from the Internet.
7. (Previously presented) The method of claim 2, wherein information received by the network device from the first network is not provided to the second network by the network

device, and wherein information received by the network device from the second network is not provided to the first network by the network device.

8. (Previously presented) The method of claim 2, wherein both the first message and the second message include at least one data packet.

9. (Previously presented) The method of claim 2, wherein the first and second messages are received by the network device using a first network connection initiated by a first process and a second network connection initiated by a second process, respectively, the method further comprising:

assigning to the first process a default first routing context number; and
assigning to the second process a default second routing context number.

10. (Previously presented) The method of claim 9, further comprising inheriting the default first routing context by a third process, whose parent is the first process, at the time of creation of the third process.

11. (Previously presented) The method of claim 2, further comprising associating at least one interface to the operating system instance with a routing context.

12. (Currently amended) A computer system comprising:

a first network that is associated with a first routing context;

a second network that is associated with a second routing context;

a network device that receives messages from both the first network and second network at a networking address, wherein the network device is configured to determine that messages received from the first network are associated with the first routing context and to determine that messages received from the second network are associated with the second routing context and the network device tags the messages to maintain the association with a routing context while being processed by the network device;

a computer readable medium storing a process ~~running on the first network~~ that is associated with the first routing context and receives at least one of the messages tagged by the network device for the first routing context, wherein the process inherits information from the first routing context when the process is created by the first routing context; and

a plurality of processors residing in the network device implementing a distributed host, wherein a processor of the plurality of processors implements multiple hosts ~~one IP host while running multiple operating system instances~~.

13 - 20. (Withdrawn).

21. (Previously presented) The method of claim 1, further comprising providing an IP host that is compatible with existing protocols.

22. (Previously presented) The method of claim 1, further comprising running separate operating system instances on a plurality of processors residing on the network device, which implement a single IP host.

23. (Currently amended) An apparatus residing in a network comprising:

a plurality of processors residing in the apparatus ~~and running multiple operating system instances~~ and implementing a distributed host, wherein individual processors of the plurality of processors determine responsibility for processing packets received at each processor; and

at least one computer readable medium, in communication with at least one of the plurality of processors, storing an operating system instance whose kernel includes a field to indicate an appropriate virtual routing context within the apparatus to handle an incoming data packet, wherein the field is heritable in the virtual routing context.

24. (Previously presented) The method of claim 23, further comprising providing an IP host that is compatible with existing protocols.